

**HAWK**  
Powered by NetFLOW



## **NetFLOW Hawk Server**

## **Hardware User Manual**

## Hazard Warnings & Operating Conditions

*This section contains critical safety information for the operation of your NetFLOW Hawk Server.*



This device must be operated indoors in a climate-controlled environment.

This device must be kept in a dedicated server room or rack with proper ventilation to ensure continuous airflow.



This device must be plugged into a separate, dedicated power outlet. Do not use power strips or share the outlet with other high-draw equipment, as this can cause voltage instability and system crashes.



The operating environment must be "just right"—it should not be exposed to extreme heat or extreme cold.

Keep the server away from high humidity and dust, as these can lead to internal short circuits or clogged fans.



Ensure the server is kept away from sunshine or other radiating heat sources that could cause the internal components to overheat.

Do not open the device casing. Unauthorized opening may void the warranty.



Do not dispose of this electronic device with household garbage. Use local collection points for electronic waste.

## **NetFLOW Hawk Server**

The NetFLOW Hawk Server is a professional software and hardware-based solution designed specifically for advanced video surveillance, high-speed recording, and AI-driven security analytics.

As the flagship of the NetFLOW product family, the Hawk Server is a scalable model featuring a high-performance engine for real-time video stream processing and 24/7 reliability. The recording and playback performance is dynamic and depends on the camera resolutions, frame rates, and the specific video codecs being utilized across the network.

The hardware is designed for standard rack integration, measuring 19" wide and 4 rack units (4U) high. The chassis is built for enterprise durability and includes professional-grade components optimized for constant, high-demand workloads. Storage is highly flexible via a multi-bay hot-swap interface, managed by a professional hardware controller to ensure maximum data redundancy and protection against drive failure.

Physical video outputs are provided through a high-end dedicated graphics architecture, supporting multi-monitor high-resolution displays for security command centers. The server software variations allow users to define the number of camera channels and AI analytics licenses required for their specific site.

## **Drivers & Software**

All necessary drivers for the system hardware and integrated controllers are pre-installed on the primary solid-state drive. Software updates, including NetFLOW VMS "Driver Packs," are released regularly to provide support for the newest camera models and security features.

## Management Interface

The system comes pre-loaded with a professional 64-bit operating system and the NetFLOW VMS suite. Upon booting, the system can be configured to automatically launch the NetFLOW service, which manages all background recording and camera communications.

The interface allows for immediate access to critical security actions:

- **Live View:** Provides real-time monitoring of all connected cameras.
- **Playback & Export:** Allows for the quick retrieval and backup of recorded incidents from the protected storage array.
- **Remote Management:** Using integrated remote tools, you can establish a secure connection to the Hawk Server from another computer on your network or via mobile applications.

By utilizing a client workstation, authorized users can interact with the server dashboard remotely. This allows for full control of the security system from an office or monitoring station without needing to be physically present in the server room.

## Product Specifications

Operating system	Windows 11 Professional 64-bit Desktop Environment
Processor	Next-generation High-Performance Series (up to 5.50 GHz)
Storage for operating system	1TB High-Speed NVMe SSD
Storage for metadata	1TB High-Speed NVMe SSD
RAM	16GB High-Frequency DDR5 (can vary due to requirements)
Graphics card	NVIDIA RTX Professional-grade AI & Video Analytics GPU
RAID Controller	Enterprise Hardware RAID (SATA 6Gb/s / SAS 12Gb/s / PCIe 4.0)
Hard Drive Bays	5-Bay 3.5" Hot-Swap Storage Interface
LAN/Network	High-Speed Multi-Gigabit Ethernet
Product Size (WxHxD)	19" wide and 4U high (Rackmount Standard)
Power Supply	850W 80 PLUS Gold Certified

## Optional Configurations

Storage Expansion	Up to 5 additional high-capacity SATA/SAS enterprise drives via hot-swap bays
Network Expansion	Additional high-speed NIC options supported via PCIe slots



**Zone 1: Power Input (Left Side)**

- Main Power Socket: Connect the 115V-230V AC power cable here.
- I/O Switch: Ensure this rocker switch is in the "I" (On) position for the server to receive power.

**Zone 2: HDMI and Display Port (Bottom Center)**

- "FOR DISPLAY" (Sticker): Use these two ports (HDMI/DisplayPort) for your primary system setup or local monitoring console.

**Zone 3: Network (Bottom Center)**

- "FOR ETHERNET" (Sticker): This is your primary network gateway. Connect your local area network (LAN) cable here for internet and client-side communication.

**Zone 4: Ports (Bottom Center)**

- USB Ports: Use the Blue (3.0) and Black (2.0) ports for a keyboard, mouse, or high-speed backup drives.
- Audio Ports: Color-coded 3.5mm jacks for audio input (Blue/Pink) and output (Green).

**Zone 5: Specialized Expansion Cards**

- "FOR AI ONLY" (Sticker): **Do not use this for display.** The GPU in this slot is dedicated exclusively to hardware-accelerated AI-processing and video analytics. All monitoring displays should be connected to the "FOR DISPLAY" section in Zone 2.

**Zone 6: Additional Ethernet port**

- "FOR CAMERA" (Sticker): This dedicated Ethernet port is reserved for your camera network. Connect your WatchNet camera switch directly to this port to isolate camera traffic from the rest of your network.
- SCSI-Style Port: High-density port located between the AI and Camera labels for specialized industrial connections.

**Zone 7: Thermal Management (Top Center)**

- Dual Cooling Fans: These vents must remain unobstructed. Ensure there is at least 6 inches of clearance from the wall to allow hot air to escape the chassis.

## Warranty & Product Lifecycle

- **Comprehensive Warranty:** Includes coverage for all internal components, including the processor, GPU, and RAID controller.
- **Modular Support:** The 4U rackmount design and hot-swap bays allow for rapid component replacement to minimize system downtime.
- **Operational Lifespan:** Designed for a 7 to 10-year lifecycle in a standard server room environment.
- **Future-Proofing:** High-frequency memory and AI-capable GPU provide the "headroom" necessary to support future software versions.
- **Parts Availability:** Spare parts and service components are expected to be available for a minimum of 5 to 7 years from the date of purchase.

*Note: Specific internal parts and components are subject to change based on market availability and hardware compatibility requirements.*

## Operating Conditions & Server Maintenance

- **Ventilation:** This device must be kept in a dedicated server room or rack with proper ventilation to ensure continuous airflow.
- **Temperature:** The operating environment must be kept between 18°C and 24°C; it should not be exposed to extreme heat or extreme cold.
- **Acclimatization:** If moved from a cold environment to a warm room, let the server sit for 2 hours before powering on to avoid moisture damage.
- **3-Month Cleaning:** Every three months, use compressed air to clean the internal cooling system and case fans to prevent heat buildup.

## Software lifecycle and update policy

Type of Release	Approximate time interval	Description and availability
Major release	1–1.5 years	It includes significant new features and architectural changes.
Hotfix release	3–6 months	It contains fixes of critical bugs and vulnerabilities, improvements, and can also include new features.
Patch	As needed	Urgent fixes of critical incidents. It is available upon request through technical support

## Licensing policy with regard to software updates

The company guarantees a simple and predictable update process:

1. License compatibility: New versions of the software are fully compatible with license keys from previous versions. Updating your software doesn't require a new key.
2. Saving of functionality: After the update, all previously purchased and activated features remain fully available.
3. Access to new features: Functionality added in the new version and subject to licensing, isn't available until you update the license key.

## NetFLOW Hawk Server - "Out-of-Box" Configuration State

### Hardware Physical State

Before dispatch, the unit undergoes a physical audit to ensure 24/7 operational readiness.

- Chassis: 4U Rackmount (19" Standard) with all thumb-screws tightened.
- Cooling: Internal Noctua CPU cooler and StarTech exhaust fans have been stress-tested for silent operation.
- Power: The 850W Gold PSU is set to the correct voltage for the destination region.
- Port Labeling: Custom stickers are applied to the rear I/O to identify "FOR DISPLAY", "FOR ETHERNET", "FOR AI ONLY", and "FOR CAMERA" ports.

### Storage & RAID Baseline

The storage array is pre-configured for high-performance surveillance write-cycles.

- Custom Raw Storage: Total physical capacity is determined by the specific hardware edition ordered (e.g., 20TB, 60TB, 100TB+).
- RAID Level: RAID 5/RAID 10 (Distributed Parity) is the factory standard for all Hawk Servers. This configuration protects data against a single drive failure while maximizing available space.
- Usable Capacity Calculation: The formatted NTFS partition typically equals approximately 75% to 80% of the Raw Storage capacity. (For example: a 60TB Raw system yields ~45.87TB of usable space after parity and Windows formatting overhead).
- System Drive: A dedicated 1TB High-Speed NVMe SSD is used for the Operating System to ensure fast boot times and independent system stability.
- Metadata Drive: A second 1TB High-Speed NVMe SSD is dedicated to VMS database indexing, ensuring high-speed search and retrieval of recorded footage.

### Pre-Installed Software Environment

The server is shipped "Ready-to-Record" with the following environment:

- Operating System: Windows 11 Pro 64-Bit (Current Version).
- Drivers: Latest NVIDIA and Broadcom MegaRAID drivers are validated and installed.
- VMS Suite: NetFLOW VMS pre-loaded.
- Security: Windows Firewall is configured to allow VMS traffic; Automatic Restarts are Disabled to prevent recording gaps.

## "First Boot" Network Settings

To integrate the Hawk Server into your site, use these default office settings:

- LAN Port ("FOR ETHERNET"): Set to DHCP for easy network discovery.
- Camera Port ("FOR CAMERA"): Set to Static IP 192.168.1.100 (Default for WatchNet MPIX camera discovery).